Avery Weigh-Tronix

ZK840

Counting Scale

User Instructions

AWT35-501613
Issue AA

Table of Contents

1 General information and warnings

1.1 About this manual

This manual is divided into chapters by the chapter number and the large text at the top of a page. Subsections are labeled as shown by the 1.1 and 1.1.1 headings. The names of the chapter and the next subsection level appear at the top of alternating pages of the manual to remind you of where you are in the manual. The manual name and page numbers appear at the bottom of the pages.

1.1.1 Text conventions

Key names are shown in **bold** and reflect the case of the key being described. If a key has a dual function it may be referred to by its alternate function.

Displayed messages appear in ***bold italic*** type and reflect the case of the displayed message.

Annunciator names appear as *italic* text and reflect the case of the annunciator.

1.1.2 Special messages

Examples of special messages you will see in this manual are defined below. The signal words have specific meanings to alert you to additional information or the relative level of hazard.

CAUTION!
This is a Caution symbol.
Cautions give information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.

NOTE: This is a Note symbol. Notes give additional and important information, hints and tips that help you to use your product.

1.2 Installation

NO USER SERVICEABLE PARTS. REFER TO QUALIFIED SERVICE PERSONNEL FOR SERVICE.

1.2.1 Safe handling of equipment with batteries

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ATTENTION: Il y a danger d'explosion s'il y a remplacement incorrect de la batterie, remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

1.2.2 Wet conditions

Under wet conditions, the plug must be connected to the final branch circuit via an appropriate socket / receptacle designed for washdown use.

Installations within the USA should use a cover that meets NEMA 3R specifications as required by the National Electrical Code under section 410-57. This allows the unit to be plugged in with a rain tight cover fitted over the plug.

Installations within Europe must use a socket which provides a minimum of IP56 protection to the plug / cable assembly. Care must be taken to make sure that the degree of protection provided by the socket is suitable for the environment.

1.3 Routine maintenance

IMPORTANT: This equipment must be routinely checked for proper operation and calibration.
Application and usage will determine the frequency of calibration required for safe operation.

Always isolate the indicator from the power supply before starting any routine maintenance to avoid the possibility of electric shock.

1.4 Cleaning the machine

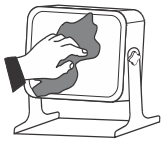


Table 1.1 Cleaning DOs and DON'Ts

DO	DO NOT
Wipe down the outside of standard products with a clean cloth, moistened with water and a small amount of mild detergent	Attempt to clean the inside of the machine
	Use harsh abrasives, solvents, scouring cleaners or alkaline cleaning solutions
Spray the cloth when using a proprietary cleaning fluid	Spray any liquid directly on to the display windows

1.5 Training

Do not attempt to operate or complete any procedure on a machine unless you have received the appropriate training or read the instruction books.

To avoid the risk of RSI (Repetitive Strain Injury), place the machine on a surface which is ergonomically satisfactory to the user. Take frequent breaks during prolonged usage.

1.6 Sharp objects

Do not use sharp objects such as screwdrivers or long fingernails to operate the keys.

1.7 FCC and EMC declarations of compliance

United States

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe A prescrites dans le Règlement sur le brouillage radioélectrique edicté par le ministère des Communications du Canada.

European Countries

WARNING: This is a Class A product. In a domestic environment, this product may cause radio interference in which the user may be required to take adequate measures.

2 Introduction

The ZK840 is a fully programmable indicator which, when attached to a BSQ digital scale base, creates a highly accurate counting and weighing system. With custom programming the indicator and its touch-screen graphic display can perform many other functions.

The indicator, shown in Figure 2.1, requires 100 VAC - 240 VAC, 50 or 60 Hz or 9-36VDC. The indicator has two full duplex RS232 ports, two USB host ports, Ethernet port, one Micro SD slot, three logic level inputs with configurable functions, three setpoint outputs and an expansion card slot for 1 of 2 option cards:

- 802 Wireless card
- 5V Analog scale card

Other options available are a stack light kit for visual confirmation of outputs, two columns for mounting the indicator above the BSQ base, battery packs and scanners. The ZK840 allows five bases to be used (one local BSQ base, two remote BSQ bases and two analog platforms). Other base combinations are available.

See the Specification literature for a full list of specifications.

For information on the BSQ bases please refer to the manuals for the BSQ line.

Figure 2.1 shows the front panel of the ZK840 indicator. The front panel consists of the keys and the graphic display.

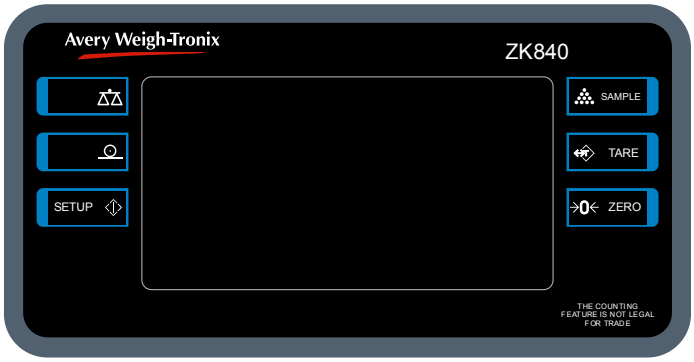


Figure 2.1 ZK840 front panel

Never press a key with anything but your finger. Damage to the overlay may result if sharp or rough objects are used.

2.1 Front panel keys

The keys and their functions are listed below.

	The **SAMPLE** key can be used to perform custom application functions.
	Press the **TARE** key to perform a pushkey tare function or with zero weight on the scale press the **TARE** key to enter a known tare. To clear a tare, press and hold the **TARE** key.
	Press the **ZERO** key to zero the display.
	The **SETUP** key can be used to perform custom application functions. It can also be used to access the password entry screen for menu access.
	Press the **PRINT** key to print the configured information through the configured port. A long key press will print and clear the Count totals.
	Press the **SCALE** key to switch the display between different connected scale bases.

2.2 Annunciators

On screen you will see various annunciators. Below are the annunciators and what they mean.

 Motion - This appears when the indicator senses scale motion.

 Center of Zero - This appears when the scale is in the zero window.

SCL#1 Scale - If multiple scales are attached and active, this annunciator shows which scale's information is being displayed.

W1 Weight Range 1 - For multi-range operation, this shows which weight range the weight is in. May also be **W2** or **W3**.

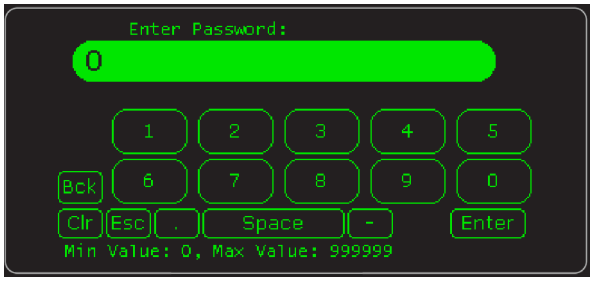
PT Appears when a Preset Tare is active.

2.3 Powering up a ZK840 indicator

The indicator is always active as long as power is received. Power must be 100-240 VAC with a frequency of 50 or 60 Hz, or 9-36 VDC.

2.4 Menu access and navigation

The menus used to configure the ZK840 are accessed with passwords. Press and hold the **SETUP** key to access the password entry screen, shown below.

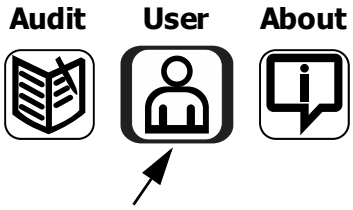


Note that the display shown above and throughout the manual is not proportional to the actual screen. It is shortened vertically to save space on the page when practical.

In general, a menu is made up of a group of top level items, sub levels under each of those and lists of items to view or configure. There are variations on this theme. Sometimes there may be no sub level or there maybe two sub levels before you get to a list of items to set.

You will see on-screen lists with instructions on how to choose and set an item in each menu list. On-screen prompts guide you as you move through the menus.

When icons are on screen the bold box around an icon means it is the highlighted icon. See the example below.



Highlighted icon

When a text list appears on screen the highlighted item is shown by a green bar over the text. See the example below.

Press the up or down arrow to move the highlight and then press the Enter key to accept the choice. Press **Esc** to return to the previous screen without making a change.

The main menu is made up of the User, About and Audit menus. See Chapter 4 for complete information.

2.4.1 Escaping or exiting from a menu

In any menu you will have either **UP** or **ESC** keys listed on-screen.

If **ESC** is listed use it until it disappears then use the **UP** key until you are asked if you want to save any changes or not. Highlight your choice and press **ENTER** to accept.

The indicator will reboot and return to the startup screen.

2.5 Adjusting screen contrast

To adjust the screen contrast press and hold the middle key on the left side of the ZK840 and repeatedly press the **SAMPLE** key to increase contrast or the **TARE** key to decrease the contrast. You may need to press the key many times until the change is visible.

2.6 Touch screen calibration

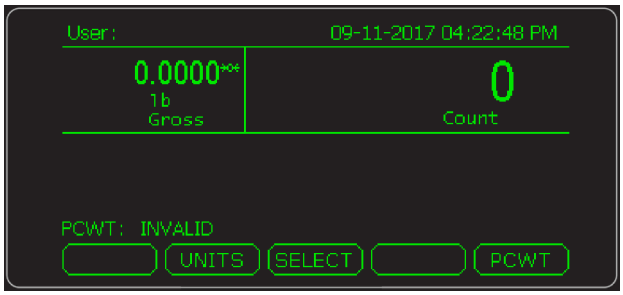
If you need to calibrate the touchscreen, press and hold the top key on the left side of the ZK840 on powerup and the touch calibration screen appears. Follow the prompts to calibrate the screen.

3 Operating Instructions

3.1 Power up

The indicator can be powered by one of the battery options on the BSQ scale or by AC power supply. If the battery option is used, there is a power key on the rear of the scale. Press and hold the key until the screen lights up. If AC power is used, when the power is on, the indicator is on.

When the indicator is powered up, you will see a start screen similar to the one below.



The Count application without the database is active by default. The screen shows the user name and time and date in the top line. Below that is the current weight and the count screen. Below that are the piece weight and active softkeys.

Click the User area of the screen and a keyboard pops up so that you can enter your desired user name. Press **Enter** to accept. The user name will remain active until changed or deleted.

Click the time and date area and enter the requested data, i.e. Year, month, etc.

Below are short descriptions of three softkeys' functions.

UNITS key	Use this key to change unit of measure.
SELECT key	Use this key to scroll through the active display values. By default they are: ***Gross***, ***Net***, ***Tare***, ***Count*** and ***Piece weight***.
PCWT key	Use this key to enter a known piece weight.

3.2 Printing

Press the **PRINT** key when there is no scale motion. What is printed is typically controlled by the custom program. If accumulation function is configured, press and hold the **PRINT** key and any accumulated counts will be printed and cleared.

3.3 Simple Weighing (no database active)

The Count application is the default application when you power up the ZK840. You can also do simple gross/tare/net weighing by following the instructions below.

First step - power up

The first step for all these instructions is to power up the scale by applying AC or DC power. If DC power is being used with a BSQ base, a power key is on the back panel of the scale. Press the key to power up the indicator. If AC power is used, when the unit is plugged in it will power up immediately.

Second step - zero the scale

The next step is to zero the indicator if the display does not read 0 weight. Press the **ZERO** key to zero the indicator.

3.3.1 Gross weighing

To weigh any object within the scales capacity, place the item on the scale …

The weight is displayed.

3.3.2 Tare/Net weighing

1. To perform a tare weighment, place the container to be tared on the scale and press the **TARE** key …

   The display shows the *Net* annunciator and the weight is tared from the display.

2. Place the material to be weighed in the container …

   The net weight is displayed.

3. Repeat steps 1 and 2 for a different sized container. Repeat step 2 if the containers are all the same weight.

4. To remove a tare weight, empty the scale, press and hold the **TARE** key.

*To key in a known tare, remove all weight from the scale, press the **TARE** key and enter the known tare weight using the keyboard that is displayed. Press **Enter** to accept.*

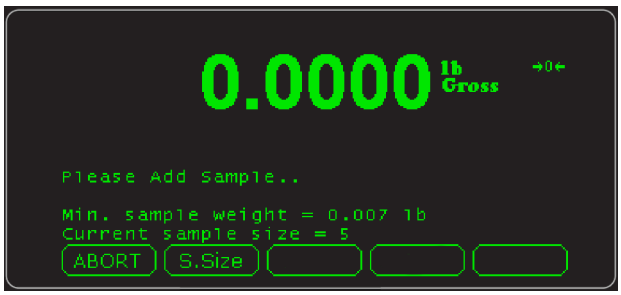
3.3.3 Counting

Simple counting

To perform a simple counting procedure, follow these steps:

1. Press the **SAMPLE** key …

   The scale zeros itself and the following screen appears:



Since, by default, the scale zeroes itself when sampling, you need not tare the weight of a container. Place it on the scale first and it's weight will be zeroed when you begin the sampling process. If this option is active, tare the weight of a container first, before sampling. See ***R.Sample*** *on page 43.*

2. There are several actions you can take using the available keys (which can vary depending on configuration of your indicator through the supervisor menu):

   Press the **ABORT** key to return to the start screen.

   If enabled, press the **S.Size** key to change the sample size. Use the displayed keypad to enter your desired sample size and press **Enter**.

   If enabled, press the **Acc%** key to change the desired accuracy. Choose from the choices displayed. The expected accuracy is based on the noise in the zero acquired and the weight of the sample on the scale. The expected accuracy can be improved by aborting and changing the environment and then starting over, or by increasing the sample size and adding more parts.

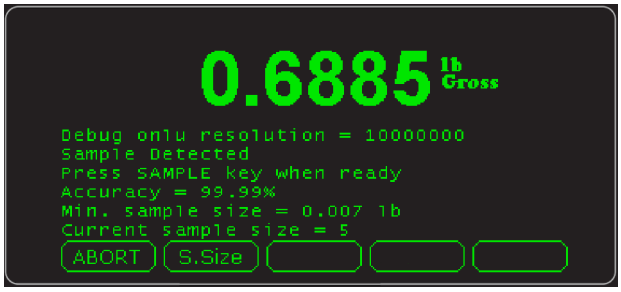
   If enabled, press the **SMODE** key to change the sample mode. Choices are ***Dribble*** (default) or ***Bulk*** sampling. This is set in a password protected Supervisor menu. Each type is defined below.

   Dribble sampling definition:
   When sample parts are being added to the scale they can be counted out slowly or, in other words, dribbled onto the scale. A key press (**SAMPLE** key) is needed to finish the sampling process. The piece weight is calculated and the count is displayed.

   Bulk sampling definition:
   When sample parts are being added to the scale they must all be placed on the scale at once, in other words, in bulk. If the sample is large enough to meet the minimum weight requirements the piece weight is calculated and the count is displayed with no extra key presses.

3. Place the number of samples shown on the screen onto the scale: Current sample size = 5 …

   The following screen is displayed:



   The screen shows the expected accuracy and requests you press the **SAMPLE** key when ready.

4. Press the **SAMPLE** key …

   The screen briefly shows that the sampling was successful and then returns to the start screen with the new piece weight active and the current count shown in the ***Count*** window.

5. Add more parts to be counted.

6. Clear the scale and weigh more parts of the same piece weight or sample new parts that have a different piece weight.

3.4 Advanced operations

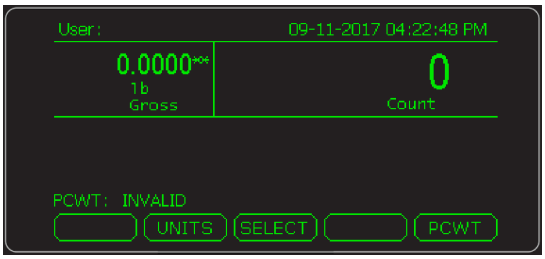
This section will explain scale operation using some of the options which are available through the password protected *Supervisor menu on page 36*. Using this menu a supervisor can alter the configuration of the ZK840. Alternate display layouts can be chosen. Different keys can be shown. Different functions such as use of the database and accumulation can be configured. This section will introduce and give examples of how these advanced features can be used.

3.4.1 Customizing screens

There are screens which can be chosen in the supervisor menu to display different information in various formats. Following are examples of these screens.

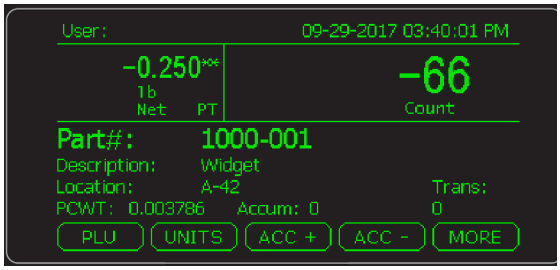
Split Screen w/o DB:

Split screen without database. This screen shows the weight on the left side and the counts on the right. User and Time and Date are shown across the top of the display. Piece weight is shown above the softkeys. Softkeys appropriate to this option are displayed. The database is disabled.



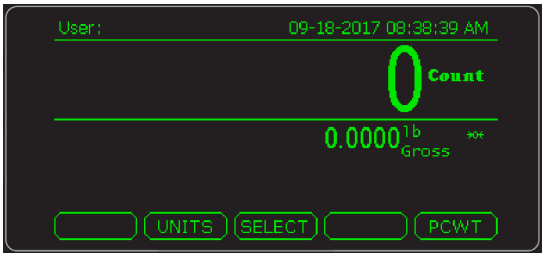
Split Screen w/ DB:

Split screen with database. This screen shows the weight on the left side and the counts on the right. User and Time and Date are shown across the top of the display. Piece weight is shown above the softkeys as well as other PLU information. Softkeys appropriate to this option are displayed. The database is enabled.



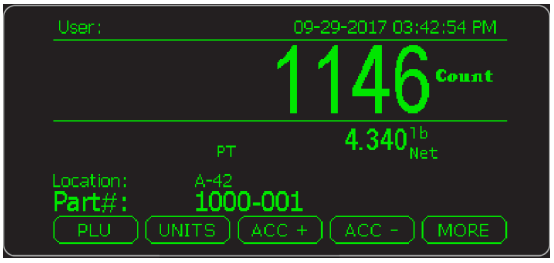
Large w/o DB:

*Large screen without database.*This screen shows a large count display and a small weight display below the count. User and Time and Date are shown across the top of the display. Softkeys appropriate to this option are displayed. The database is disabled.



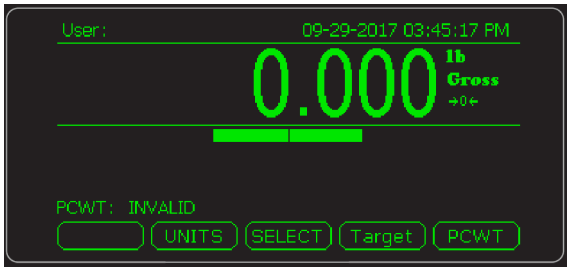
Large w/ DB:

*Large screen with database.*This screen shows a large count display and a small weight display below the count. User and Time and Date are shown across the top of the display. Softkeys appropriate to this option are displayed. The database is enabled.



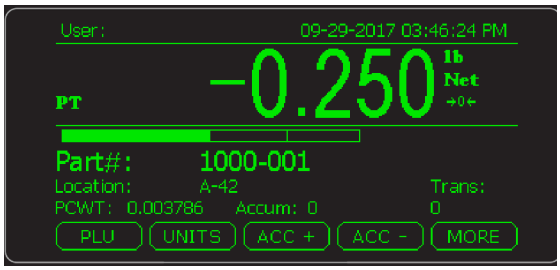
Check w/o DB:

Check counting screen without database. This screen shows a large weight display with a bar graph beneath that to show the status of the check counting operation, i.e. Over, Under or Accept. User and Time and Date are shown across the top of the display. Piece weight is shown above the softkeys. Softkeys appropriate to this option are displayed. The database is disabled.

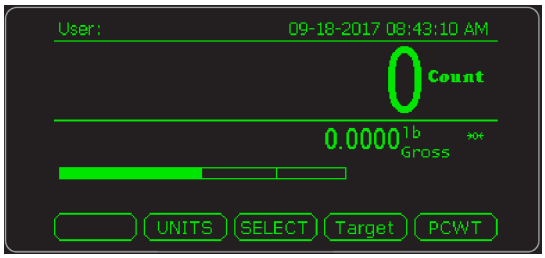


Check w/ DB:

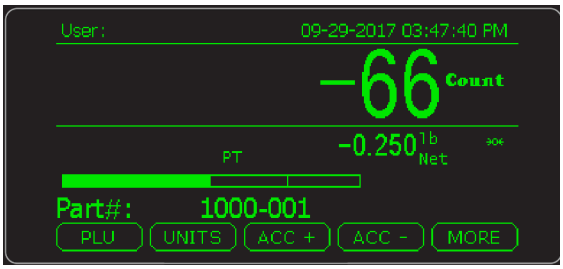
Check counting screen with database. This screen shows a large weight display with a bar graph beneath that to show the status of the check counting operation, i.e. Over, Under or Accept. User and Time and Date are shown across the top of the display. Piece weight is shown above the softkeys. Softkeys appropriate to this option are displayed. The database is enabled.



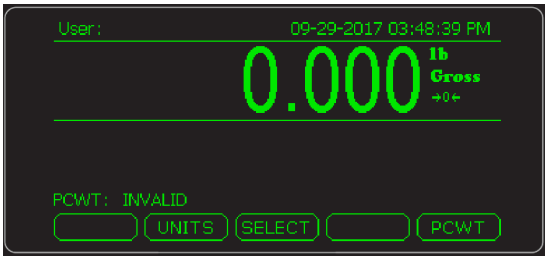
Dual Check w/o DB: *Count and Weight screen without database.* This screen shows a large count display over a small weight display and a bar graph beneath that to show the status of the check counting operation, i.e. Over, Under or Accept. User and Time and Date are shown across the top of the display. Softkeys appropriate to this option are displayed. The database is disabled.



Dual Check w/ DB *Count and Weight screen with database.* This screen shows a large count display over a small weight display and a bar graph beneath that to show the status of the check counting operation, i.e. Over, Under or Accept. User and Time and Date are shown across the top of the display. Softkeys appropriate to this option are displayed. The database is enabled.



Check with No Graph Check counting with no graph showing. Can be useful when using stack lights.



3.4.2 Database

When configured for using a database a **PLU** key appears on the display. Use this to recall a specific PLU # which exists in the database. This makes active all the enabled features of the product or item assigned to the PLU.

For example the following information can be displayed: Part number, piece weight, tare weight, Description 1, stock on hand, number of transactions and location. Other data which is not displayed but which can be printed, if so configured are: Company name, address, phone number, etc. For the full list see the *Supervisor menu on page 36*.

When the PLU is active, all associated tare weights, limits and tolerances are also active.

Auto Updating of the piece weight and tare weight:

*If **Plu Piece Weight Update** and **Plu Tare Update** are set to **ON** (in the Supervisor menu on page 44) and you have an active PLU, if you take a new sample to establish a new piece weight, the display will ask if you want to save the new piece weight to the PLU. If you do, the piece weight value is updated in the database. If you choose not to update the PLU piece weight the, recalled PLU becomes inactive and the piece weight value is used in the temporary PLU with the number **0**.*

If you establish a new tare, you are asked if you want to replace the tare value in the active PLU. If you say YES, the new value is saved in the PLU and the new tare value is active. If you say NO, the tare weight is active but the value is not saved in the PLU.

3.4.3 Accumulation

When configured, you can accumulate multiple counts by pressing the **ACCUM+** key. You can subtract a count using the **ACCUM-** key. The accumulated count will be displayed on the screen along with the number of transactions completed. The weight must return to within the zero band before you can do another accumulation. An error message will appear if not in the zero band when you press the **ACCUM** key.

To clear the accumulated counts and transactions, press and hold the **PRINT** key. The totals print format will be printed and the totals are cleared from memory.

The totals are also cleared if the indicator is powered off or if a new piece weight sample is taken.

*If a PLU is active, the accumulated total becomes **Stock on Hand** and the counts will be added or subtract from this item in the database. Press and hold **PRINT** to clear the transactions. This will not clear the total in **Stock on Hand**.*

3.4.4 Check counting

This configuration allows you to quickly count items to a preset number or range of numbers. A bargraph shows the current comparison of counts to the desired count by showing *Under* condition, *Over* condition or *Accept* condition. A moving line within the *Accept* section of the bargraph will show even finer graduations as the count approaches the center of the section. See the example shown later in the is section.

For example: If you are counting ball bearings into a box and want exactly 50 bearings, you can set the low and high limit to 50 so the graph will show an Accept condition only when 50 are in the box.

If the database is on, any tares, target counts, high and low limits or tolerances will be preset when a PLU is recalled.

If the database is off you can set the parameters for check counting. Press the **Target** key and the following screen is displayed:

Each key is explained below.

LowLim This the smallest acceptable count for the bargraph to show an *Accept* condition.

HiLim This the highest acceptable count for the bargraph to show an *Accept* condition.

Min Value at which the ***Under*** bar graph starts to shorten. *For example: If your Min value is 50 the bargraph will start to move towards the Accept condition when the count reaches 50.*

Max Value at which the ***Over*** bar graph maxes out. *For example: If your Max value is 75, the Over condition bargraph will max out when the count reaches 75.*

Check counting example

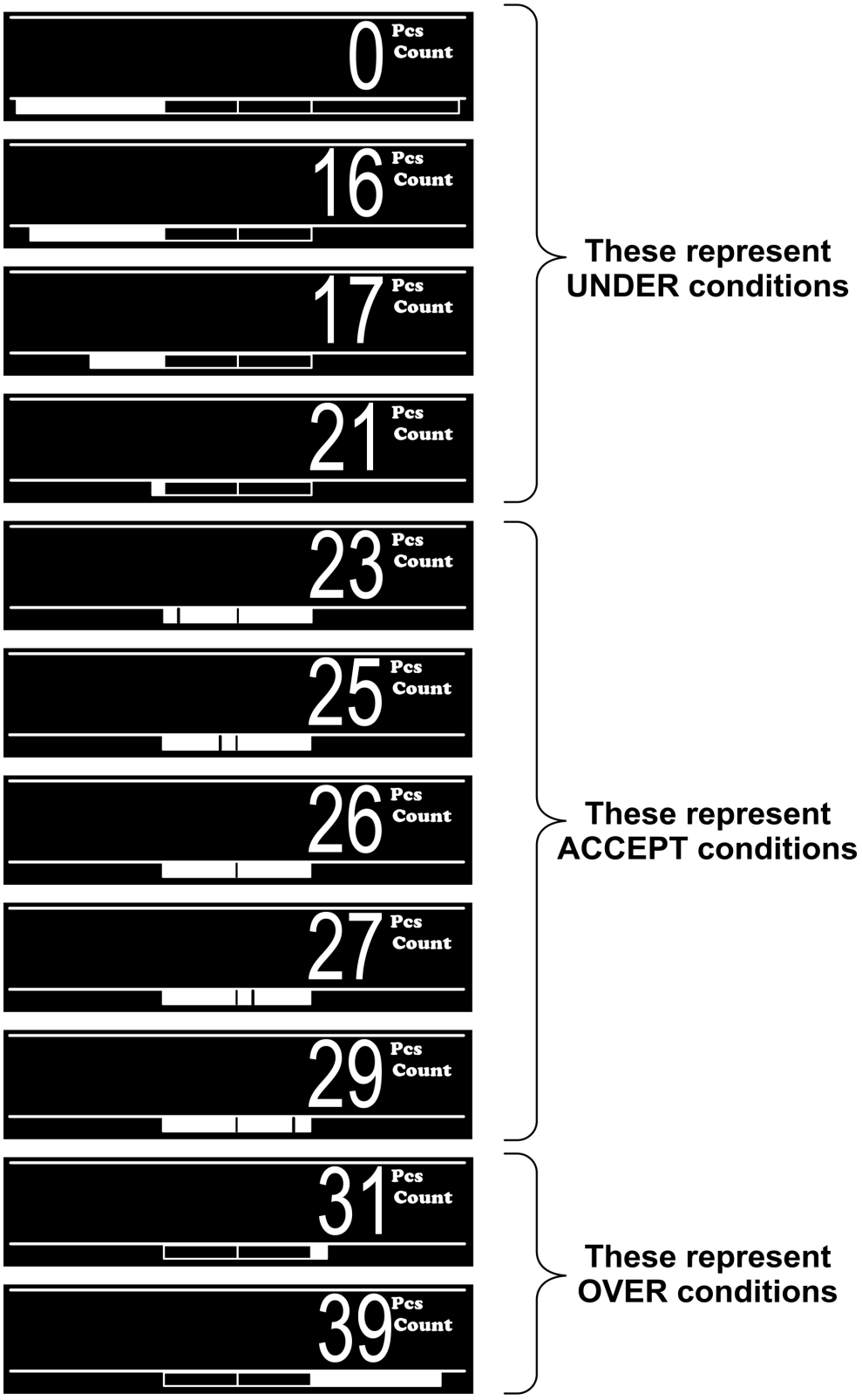
To show how the bargraph works in conjunction with the settings under Target Setup lets use the example below:

Set:

- LowLim = 22
- HiLim = 30
- Min = 15
- Max = 40

This means the middle of the Accept bargraph is a count of 26. The moving needle within the *Accept* section will appear and move to the right at count 23 and will be centered at count 26. The *Under* section of the bargraph will first start to move at count 15. At a count of 16 the first visible movement occurs. The Over section of the bargraph will be completed at count 40.

See the bargraph examples shown below that illustrate the bargraph features as the count increases.:



3.4.5 Autobase switching

This configuration works when two or more scales are connected. You can choose which base you want to be the sampling base and which base to be the counting base. After a sample is taken the display automatically switches to the counting base.

4 Menus

The ZK840 three user accessible menus:

- **User** menu - Use to set Time, Date, Site ID, check Seal status and check Archive information.
- **About** menu - Use to see information on the software, firmware, application, serial number, options, ethernet and downloads
- **Audit** menu - Use this to check and/or print the calibration and configuration counters.

The password for these menus is 111. Follow these steps to access and use these menus.

1. Press and hold the **SETUP** key until …

   the password entry screen appears.

2. Key in 111 and press the **ENTER** key …

   This screen is displayed:

   The bold box around the center image means that is the highlighted menu item.

3. Use the **Left** and **Right** keys to highlight the menu you want to enter and press the **ENTER** key. Below are the explanations for these menus.

4.1 User menu

When the User menu is selected, these choices appear:

Use the **Left** and **Right** keys to highlight the menu item you want to access and press the **ENTER** key.

Time **Set** - Use the numeric keys to enter the correct time in the style chosen below.
Style - Choose the style of time display from these choices:

- 12HR - Shows time in the 12 hour style
- 12HR-AP - Shows time in the 12 hour style with AM/PM
- 24HR - Shows time in the 24 hour style

No matter which style you pick, time must always be entered in the 24 hour style. The display of the time will follow the style you pick.

Date **Set** - Use the numeric keys to enter the correct date in the style chosen below.
Style - Choose the style of date display from these choices:

- MMDD2Y
- MMDD4Y
- DDMM2Y
- DDMM4Y

The date format is how the date is stored internally. Printed dates will appear as programmed in the selected print format.

Site ID Use the alphanumeric keys to enter a Site ID, up to six characters.

Seal Shows the status of the physical seal jumper inside the indicator: ***SEAL*** or ***NO SEAL***. If the unit is sealed, no changes can be made to the configuration of the indicator.

Archive This item appears only if so configured in the ADMIN password protected menu. This stands for electronic archive. In other regions it is known as an alibi memory or tally roll. These will be transmitted via configured communications ports. These reports can be used to confirm a weighment if it is ever in dispute. Only records that are qualified as a LEGAL record, per site motion criteria, are considered as entries to this log.

The indicator has memory capacity to store approximately 5,000 transactions.

The Archive report uses a rolling memory configuration (FIFO) so the oldest transaction will be written over first when all the memory slots are filled.

You can exit the menu by following the instructions in *Escaping or exiting from a menu on page 12*.

4.2 About menu

If you access the About menu you will see this menu:

Definitions:
Bootloader *Software that makes the electronics run.*

Firmware *Embedded system software that creates core functions of the product.*

App *Specific software that controls the behaviour for a given installation.*

Use the **Left** and **Right** keys to highlight the menu item you want to access and press the **ENTER** key.

Boot ***PartNo*** - See the bootloader part number.
Version - See the version of the bootloader.

Firm ***PartNo*** - See the firmware part number.
Version - See the version of the firmware.

App ***PartNo*** - See the application part number.
Version - See the version of the application.

Serial See the serial number of the indicator.

Option ***Bus 1*** - Choose the Bus of the option card. Only one Bus available on the ZK840.
Card 1 or 2 - Choose the Card you want to view.

- ***Type*** - View the type of card.
- ***Version*** - View the firmware version of the card.

Enet This stands for Ethernet. Use this to view the network addresses:

IP Addr - See the IP address.
Subnet - See the Subnet address.
Gateway - See the Gateway address.
MAC - See the MAC address.

DLoad This stands for download. Use this to view the following:

sSerial - View the license number that created the configuration file.
dSerial - View the license number that downloaded the configuration file.
dName - View the company name for the license shown for downloading.

This is used for security and licensing purposes.

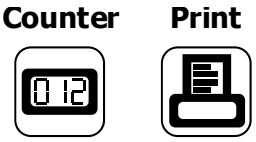
BSQ ***Scale X*** - Choose the scale.

- ***SW Part*** - View the firmware part number of the cell that is connected.
- ***Version*** - View the firmware version of the cell that is connected.
- ***Cur. Ser*** - View the serial number of the cell that is connected.
- ***Cal. Ser*** - View the serial number of the cell that WAS connected at the time of calibration.

You can exit the menu by following the instructions in *Escaping or exiting from a menu on page 12*.

4.3 Audit menu

If you access the Audit menu you will see this menu:



Counter ***Config*** - See the number of configurations the indicator has undergone.
Calib - See the number of calibrations the indicator has undergone.

Print Use this to select which port to print the audit report through. The audit report will contain both Config and Calib information. Choices are:

- ***Port 1*** Under ***Port 1*** choose to print to a column or ticket printer.
- ***Port 2*** Under ***Port 2*** choose to print to a column or ticket printer.
- ***USB*** Printing to USB requires that a USB flash drive is connected to the indicator host USB. Printing to USB will create a folder on the flash drive and a comma separated file with the data.

You can exit the menu by following the instructions in *Escaping or exiting from a menu on page 12*.

5 Error messages

In order to complete the weighing process, a number of conditions must be met. The following messages may appear which may prevent completion of the weighing sequence.

5.1 Printing errors

Timeout	Something interfered with the printing process. Check connections and retry.
Print Error	Something interfered with the printing process. Check connections and retry.
Print Aborted	Something interfered with the printing process. Check connections and retry.
Print Failed	Something interfered with the printing process. Check connections and retry.

5.2 ‘Copying to or from USB’ errors

Failed to Copy File	Something interfered with the copy process. Check USB device.
Can’t Close database	Software error. Restart indicator.
File Not Found	File doesn’t exist. Create the database.

5.3 BSQ errors

BSQ Error	Communications error
BSQ XCAL	BSQ Calibration Mismatch Error - cell that is connected to the scale is not the cell that was calibrated. X = scale number.

5.4 Accumulation errors

FAILED RTZ ERR	Scale must return to zero between accumulations.
NO COUNT ERR	Count is not a positive number when you try to accumulate. Count must be a positive value to accumulate.

6 Print formats

Below are examples of the print formats available by default. Any number of new formats can be created for special applications. See the Service Manual.

PF #1 - Gross, Tare, Net w/Units

```
Gross  0.479 lb
 Tare  0.453 lb
  Net  0.026 lb
```

PF #2 - Accumulations, Transactions, G, T, N w/Units

```
  Acc #     192
Trans #       1
  Gross   0.479 lb
   Tare   0.453 lb
    Net   0.026 lb
```

PF #3 - Count w/PCS

```
COUNT      192 PCS
```

PF #4 - Net weight

```
0.000
```

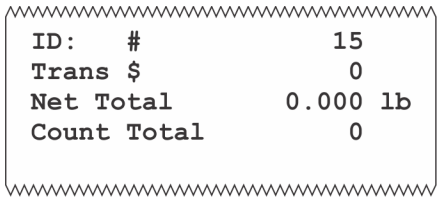
PF #5 - Broadcast to Remote display

PF #6 - Count

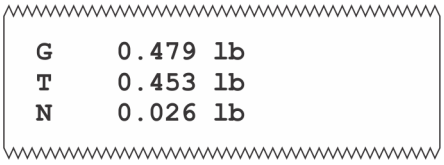
```
192
```

PF #7 - Broadcast to Remote display

PF #8 - ID, Transaction, Net and Count Total

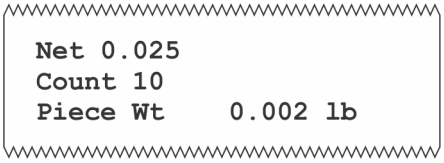


PF #9 - G, T, N w/Units

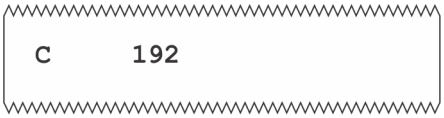


PF #10 - Net w/Units

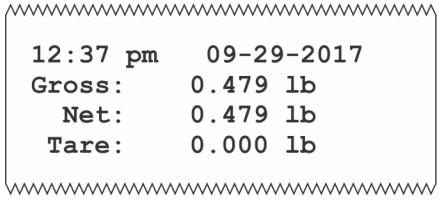
PF #11 - Net, Count and Pcwt



PF #12 - C (count)



PF #14 - Time, date, G,N,T with units



PF #15 - #14 plus Counts and Piece Weight

```
12:37 pm   09-29-2017
 Gross:    0.479 lb
   Net:    0.479 lb
  Tare:    0.000 lb
Counts      192 Pcs
Piece weight  0.002 lb
```

PF #16 - Time, date, company info, PN, Desc., G, N, T, Counts, Pcwt

```
12:37 pm   09-29-2017
Company name
Tel:
ID1:
ID2:
Part number:  15
Description PART A
Gross:    0.479 lb
  Net:    0.479 lb
 Tare:    0.000 lb
Counts      192 Pcs
Piece weight  0.002 lb
```

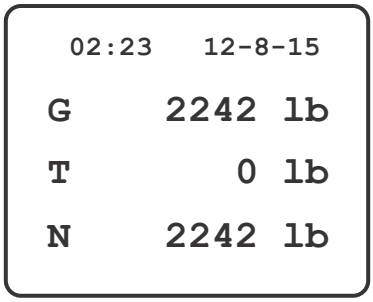
PF #17 - Format #15 plus Hi and Low Limit

```
12:37 pm   09-29-2017
 Gross:    0.479 lb
   Net:    0.479 lb
  Tare:    0.000 lb
Counts      192 Pcs
Piece weight  0.002 lb
Hi limit    0.000
Low limit    0.000
```

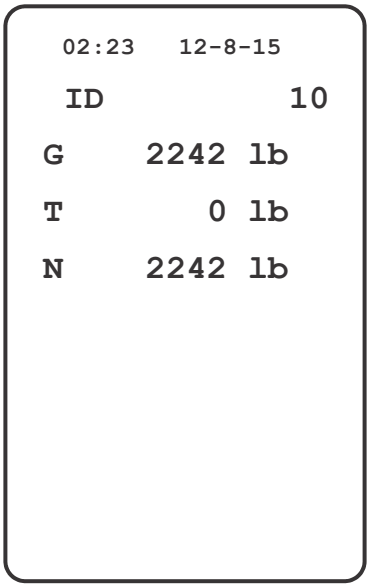
PF #18 - Format 17 plus PN and Desc.

```
12:37 pm   09-29-2017
Part number 15
Description PART A
 Gross:    0.479 lb
   Net:    0.479 lb
  Tare:    0.000 lb
Counts      192 Pcs
Piece weight  0.002 lb
Hi limit    0.000
Low limit    0.000
```

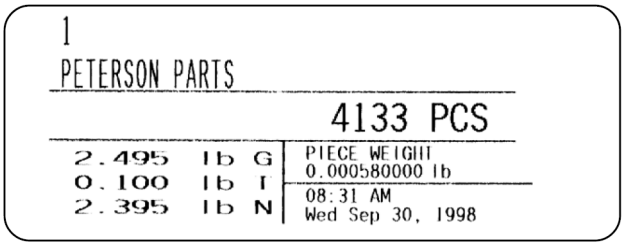
PF #1PF #20 - 1.25 x 1.0 Label with Time and Date



PF #22 - 2.5 x 4 Thermal Ticket w/ID, Time and Date

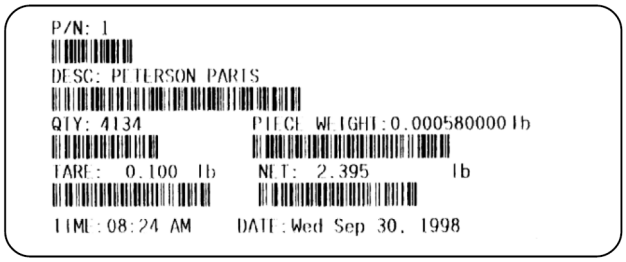


PF #23 - 2.25 x 4 Data Label

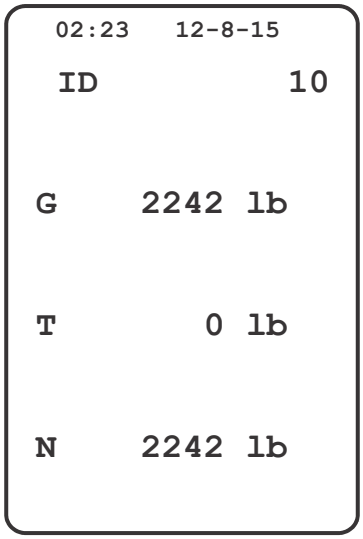


PF #24 - 2.5 x 4 Bar Code Ticket w/ Site ID, Time and Date

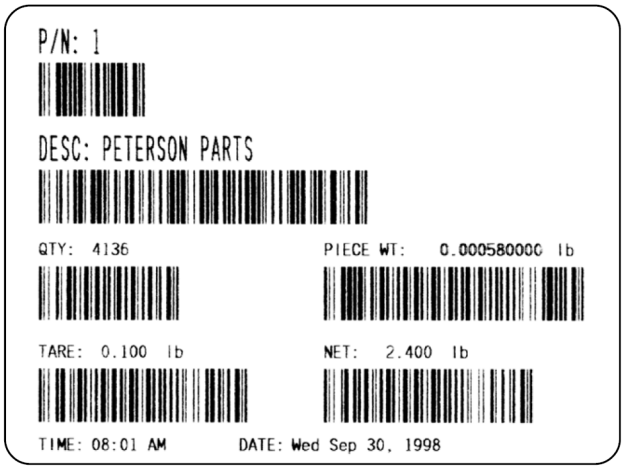
PF #25 - 2.25 x 4 Bar Code Label



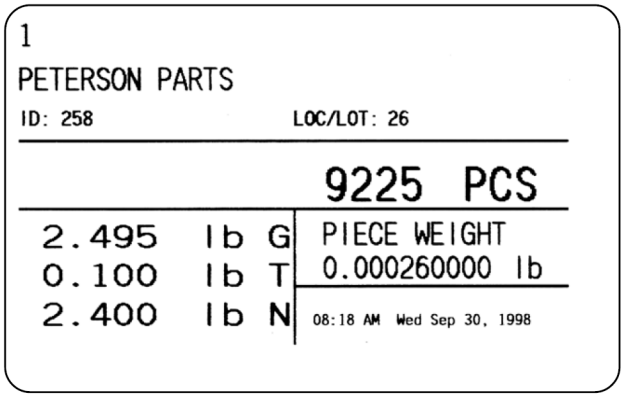
PF #27 - 4 x 6 Thermal Label Ticket w/ID, Time and Date



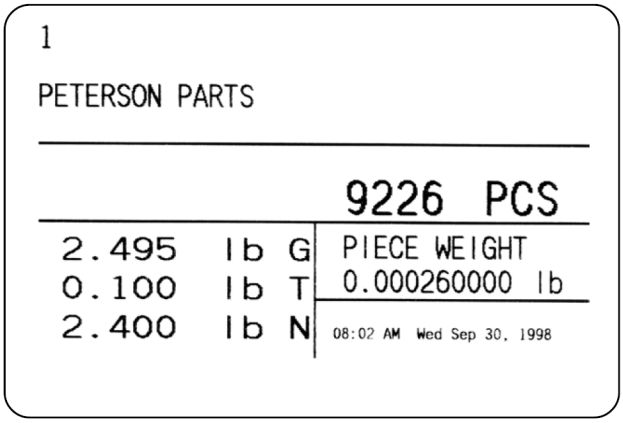
PF #28 - 4 x 6 Bar Code Label



PF #29 - 4X6 Data Label + ID



PF #30 - 4 x 6 Data Label



7 Supervisor menu

The supervisor menu, shown in Figure 7.1 allows access to the items related to the indicator's function and the Counting application that you can set or enable/disable. Follow the steps below to access the menu items described.

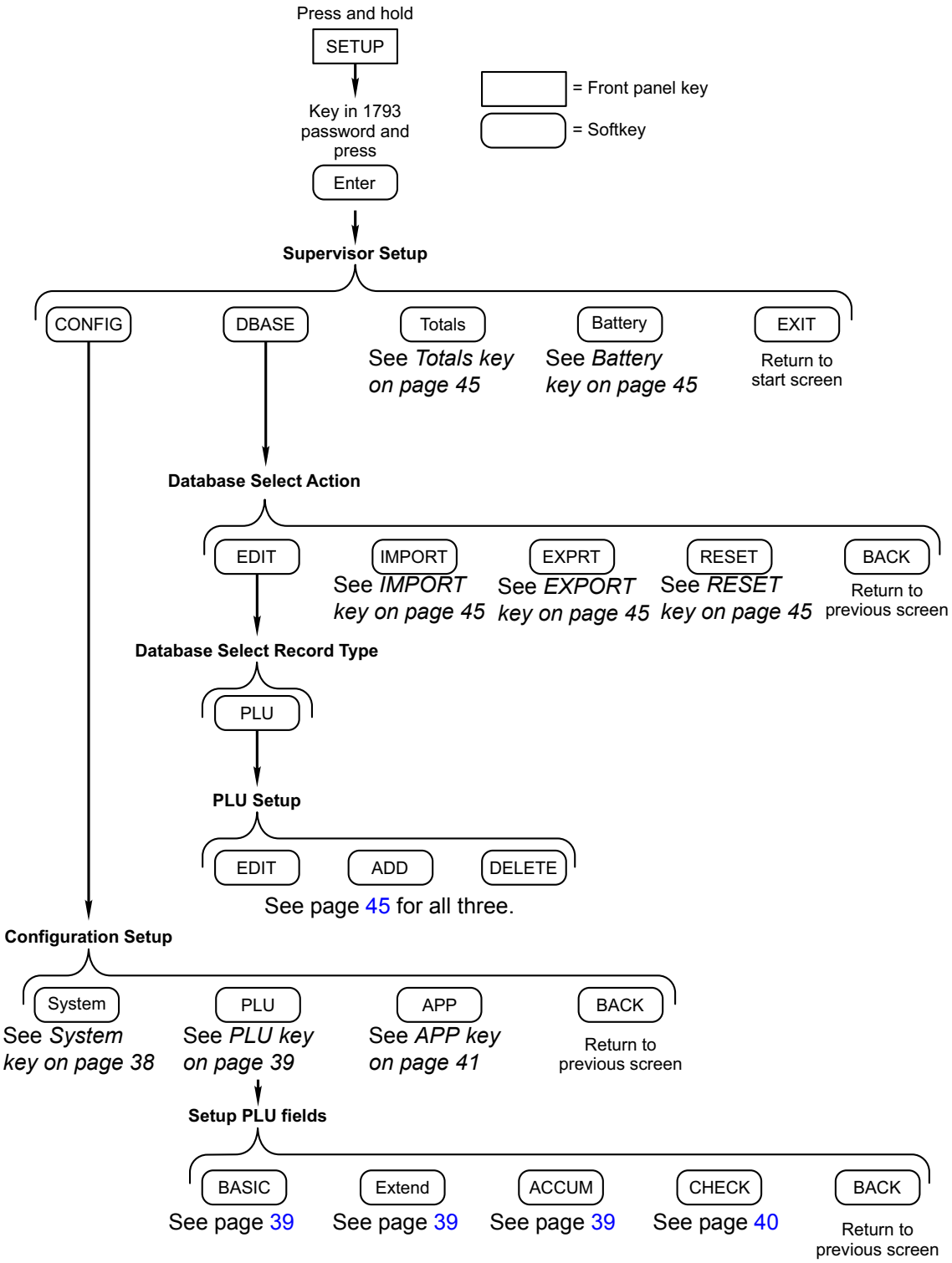
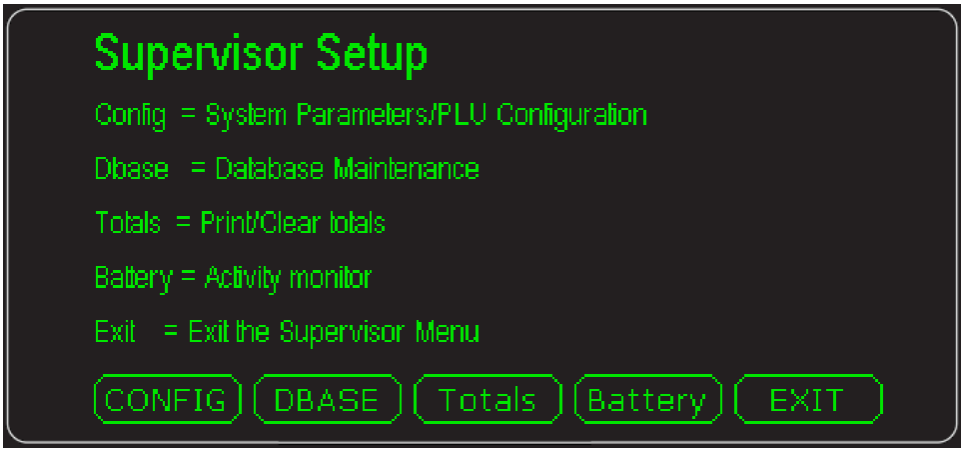


Figure 7.1 Supervisor menu

Press and hold the **SETUP** key until the password entry screen appears. Key in the Supervisor password, 1793, and press the **Enter** key. The screen below appears.



CONFIG Press this to set the system parameters and choose what items will be available in the PLU database. See *CONFIG key on page 37*.

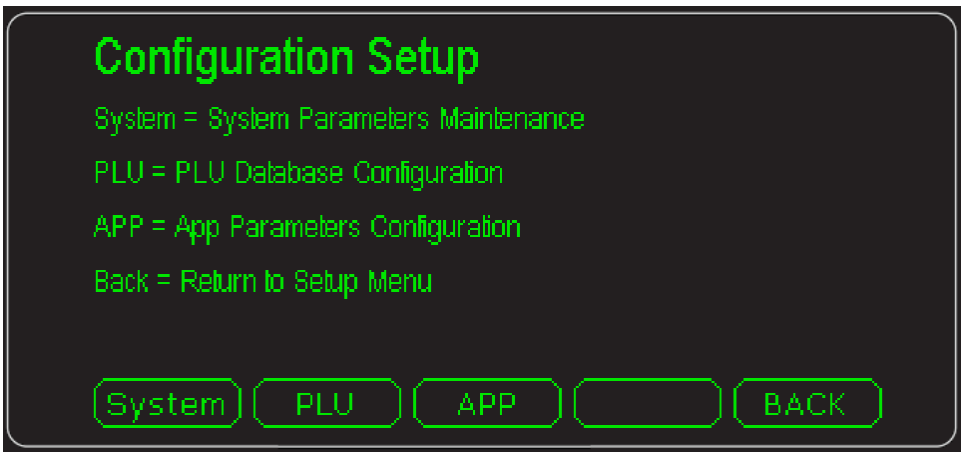
DBASE Press this to access the creation and editing functions for the PLUs in the database. You can also import, export or reset the database under this key. See *DBASE key on page 44*.

Totals This key lets you choose a report format and to print totals or clear them. See *Totals key on page 45*.

Battery Press this to monitor battery activity or to set a shut down timer. See *Battery key on page 45*.

7.1 CONFIG key

The following screen appears when you press the **CONFIG** key:



System key Press this key to setup system parameters. See *System key on page 38*.

PLU key Press this key to configure the PLU database. See *PLU key on page 39*.

APP key	Press this key to configure application parameters. See *APP key on page 41*.
Back key	Press this key to return to the Setup menu screen.

7.1.1 System key

The following items appear in the System menu. To choose the item for modification, use the up or down arrow keys to move the highlight to the desired item and press the **Enter** key.

Screen Invert	Select this to invert the color scheme of the indicator display. The default scheme is green on a black background. If you choose to turn screen invert ***On***, the screen will change to black text and graphics on a green background.
Zone	NA Enter a zone number representing where this scale is located in your system. This is useful if you have a very large facility and want to communicate with a particular zone of the facility for setup or reporting.
DB Location	Choose between ***Internal*** or ***SD card*** for the location of the database.
PLU Barcode Prefix1-3	Input PLU barcode prefix 1 through 3 using the keypad that appears. Press **Enter** to accept.
Lot # Barcode Prefix1-3	Input Lot # barcode prefix 1 through 3 using the keypad that appears. Press **Enter** to accept.
Operator Barcode Prefix1-2	Input Operator barcode prefix 1 through 2 using the keypad that appears. Press **Enter** to accept.
Next Ticket #	Input the next sequential transaction value.
Next Case #	Input the next sequential Case number.
Next Pallet #	Input the next sequential Pallet number.
Next BOL #	Input the next sequential Bill of Lading number.
Company Name	Input the Company Name.
Address 1-2	Input 2 lines of address for the company.
City	Input the City portion of the address.
State	Input the State name.
Zip Code	Input the Zip Code.
Phone #	Input the phone number.
Contact Name	Input a contact name.
Label Header 1-4	Input up to four label headers.
Label Footer 1-4	Input up to four label footers.

7.1.2 PLU key

When you press the **PLU** key the following keys appear. Press the desired key to access that item.

BASIC This key lets you enable or disable basic database fields. See the list under ***BASIC key*** on page 39.

Extend This key lets you enable or disable an series of UDF (user defined fields) for the database. See the list under ***Extend key*** on page 39.

ACCUM This key lets you enable or disable a series of fields for the database dealing with the accumulator function. See the list under ***ACCUM key*** on page 39.

CHECK This key lets you set the parameters for check counting. See the list under ***CHECK key*** on page 40.

BACK This key returns the display to the previous menu screen.

BASIC key This accesses a list of PLU fields you can choose to enable or disable. Items enabled here will appear in the database during PLU Setup. See *DBASE key on page 44*.

Description 1-3	Enable or disable up to three fields for describing the PLU.
Local Tare	Enable or disable a local tare field in the database.
Digital Tare	Enable or disable a digital tare field in the database.
Analog Tare	Enable or disable an analog tare field in the database.
Piece Weight	Enable or disable a piece weight field in the database.
Piece Weight Variance	Not used at this time.
Piece Weight Uncertainty	Not used at this time.
Units of Measure	Enable or disable a unit of measure field in the database.
Resample Timer	Enable or disable a timer which will require a resampling of parts for this PLU.
Last Sample Time	Enable or disable a field showing the last sample time.

Extend key This accesses an extended list of 10 alpha fields to define and 10 prompts, one for each field. It also has 10 numeric fields and prompts you can define. A UDF us a User Defined Field you can create.

These can be used to hold other principal data that can be stored in the PLU or can be used by a custom application.

ACCUM key This accesses the following list of accumulator related functions you can turn ***On*** or ***Off***:

	Accumulator Net	If on, this will be shown in the database.
	Accumulator Counts	If off, no accumulation shown in database or on screen.
	Transactions	If off, no transaction shown in database or on screen.
	Inventory Location	If off, no location shown in database or on screen.
	Case Counting	Not applicable in this application. May be used for custom applications.
	Pallet Counting	Not applicable in this application. May be used for custom applications.
	Pack Size	Not applicable in this application. May be used for custom applications.
	Average Run Weight	Not applicable in this application. May be used for custom applications.
	Average Run Count	Not applicable in this application. May be used for custom applications.
	Max. Run Weight	Not applicable in this application. May be used for custom applications.
	Min. Run Weight	Not applicable in this application. May be used for custom applications.
CHECK key	This accesses check counting items you can set:	
	Target Weight	Not applicable in this application. May be used for custom applications.
	Target Count	Not applicable in this application. May be used for custom applications.
	Checkweigh Count	If ON, this allows checkweighing by count.
	Max point	If ON, this allows setting of the ***Max*** item under the **TARGET** key.
	Min point	If ON, this allows setting of the ***Min*** item under the **TARGET** key.
	Target High Limit	If ON, this allows setting of the ***HiLim*** item under the **TARGET** key.

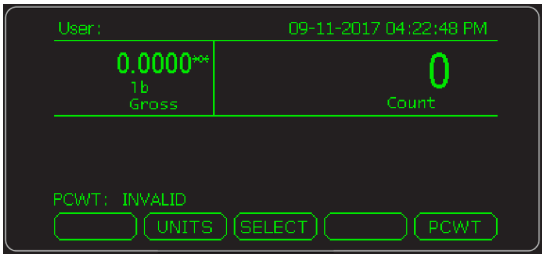
Target Low Limit If ON, this allows setting of the ***LowLim*** item under the **TARGET** key.

7.1.3 APP key

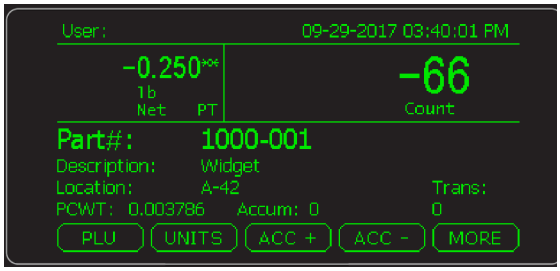
When you press the **APP** key the ***App Configuration*** list appears. Highlight the desired item and press **Enter** to access that item. Each item in the list is explained below.

Application Select this to choose the application mode you want to use. Choices and example start screens are shown below:

Split Screen w/o DB (default):

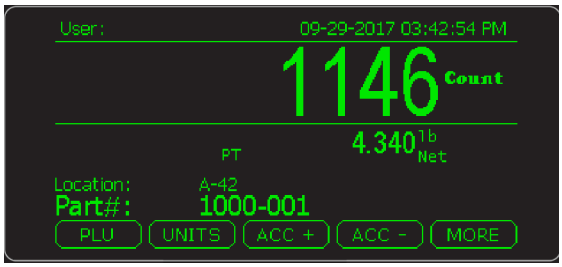


Split Screen w/ DB:

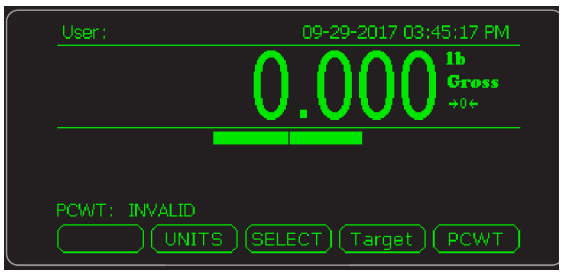


Large w/o DB:

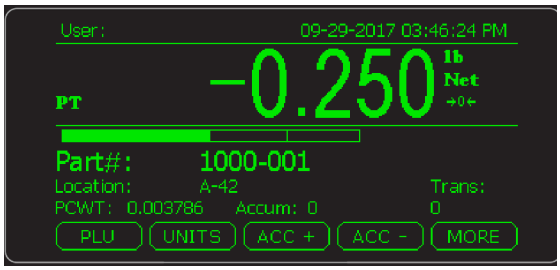
Large w/ DB



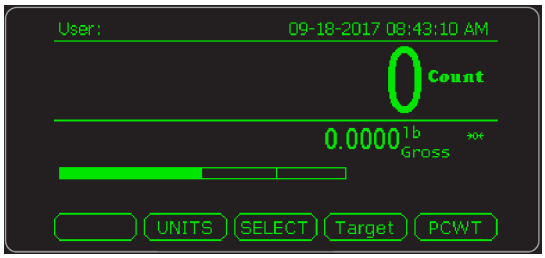
Check w/o DB



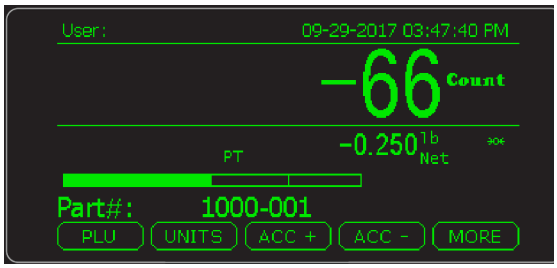
Check w/ DB:



Dual Check w/o DB:



Dual Check w/ DB:



Sample Base

If a second base is attached to the system, use this to choose which base is used for sampling. 1 = local base. 2-5 = remote bases.

Counting Base	If a second base is attached to the system, use this to choose which base is used for counting. 1 = local base. 2-5 = remote bases.
R.Sample	This stands for Reverse sampling. Default is ***Off***. When Off, press the **SAMPLE** key, the scale automatically zeros before sampling occurs. If On, you can reverse sampling. This is placing a full box with a known on the scale and sampling removed items.
Count Repeatability	This causes the scale to remember the last display weight and count. If the next weighment is the same weight or within the number of divisions selected, the last displayed count will be repeated. Choices: ***oFF***, ***1***, ***2***, ***5*** or ***10***.
Sample size key	Choose whether a **Sample Size** key appears on the Sample screen. Choices are ***Off*** or ***On***.
Sample accuracy key	Choose whether a **Sample Accuracy** key appears on the Sample screen. Choices are ***Off*** or ***On***.
Sample mode key	Choose whether a **Sample Mode** key appears on the Sample screen. Choices are ***Off*** or ***On***.
Units key	Use this to enable or disable the **UNITS** key. If disabled the key will not appear on the main display.
Target key	Use this to enable or disable the **Target** key. If disabled the key will not appear on the main display.
Select key	Use this to enable or disable the **SELECT** key. If disabled the key will not appear on the main display.
Sample Mode	Choose the sampling mode. Choices are ***Bulk*** and ***Dribble***. ***Dribble*** is the default. Bulk sampling is an automated sampling method. You place all the items to be sampled on the scale at the same time and the scale will automatically calculate the piece weight and display the count. Dribble sampling requires one more step than bulk sampling You can count the items to be sampled onto the scale and then press the **SAMPLE** key to begin the piece weight calculation. This can be handy if the items are more easily counted onto the scale one at a time versus all at once.
Sample Size	Enter the sample size to be displayed when sampling.
% Accuracy	Select the percent accuracy desired. Choices are ***Off***, ***95***, ***98***, ***99*** and ***99.5***. Default is 98%. Your accuracy can be affected by environmental conditions (vibration, air movement, etc.) sample size and piece weight of the sample.
Counting Latch	Set count latch size. If enabled the count must change by the selected amount before the display changes.

Piece Wt. Rounding	This forces a rounding of the piece weight obtained using the percentage factors listed below in the choices. This can make counts more repeatable and predictable. Choices: ***Off***, ***0.1***, ***0.2***, ***0.5***, ***1***, ***2***, or ***5***. The higher the percentage picked, the more the piece weight is rounded and the more repeatable and predictable the counts. This may also mean less accurate counts.
Piece Wt Stabilisation	This causes the scale to compare a newly calculated piece weight with the existing piece weight. If the new piece weight is within the selected percentage of the existing piece weight, the scale will continue to use the existing piece weight. Choices: ***oFF***, ***1***, ***2***, ***4*** or ***10***.
Min. Sample Wt	If you want to count very small parts and the environment is such that the scale is unable to get a sample weight that meets your accuracy requirement, you can turn this requirement off. This will allow the ZK840 to successfully get a sample weight. This may be done at the expense of your requested accuracy. Choices are ***On*** or ***Off***. If enabled you must have a sample size of 0.01% of capacity in dribble mode or 0.02% of capacity for bulk mode. If the weight you place on the scale is below these percentages the display will request additional parts until the weight is equal to or exceeds these levels. Choices: ***On*** or ***Off***.
Min. Sample Size	Use this to choose the minimum allowable sample size when you press the **SAMPLE** key. Key in your desired size. Example: If you select 10, you cannot pick a lower sample size when sampling. Default is 5.
Plu Piece Weight Update	If ON, the user can update the piece weight stored in the database.
Plu Tare Update	If ON, the user can update the tare stored in the database.

7.2 DBASE key

The following screen appears when you press the **DBASE** key:

This menu allows you to populate the available fields in the database. The default field selection can be added to or changed using the PLU configuration. See *PLU key on page 39*.

Each item is described below.

7.2.1 EDIT key

Choose which database you wish to edit. By default there is only one choices: PLU. Your indicator may have more databases enabled but the action is still the same for each.

Press the PLU key and choose to **EDIT**, **ADD** or **DELETE** items in the database.

7.2.2 IMPORT key

Use this to choose to import a database from a USB stick or via FTP. An ***Abort*** choice is also available to abort the action.

7.2.3 EXPORT key

Use this to choose to export a database to a USB stick or via FTP. An ***Abort*** choice is also available to abort the action.

7.2.4 RESET key

Resets the entire supervisor to defaults and clears the PLU database.

7.3 Totals key

Use this to enable or disable these two items or to select the report format:

Print Totals Enabled	Enable this to print totals when you press and hold the **PRINT** key.
Clear Totals Enabled	Enable this to clear totals when you press and hold the **PRINT** key.
Report Format	Use this to key in a print format number (1-40).

7.4 Battery key

Press this to choose the following:

Battery type	Choices are ***NONE***, ***BSQ*** and ***OTHER***.
Shutdown Timer	Key in the number of minutes of inactivity which will cause the indicator to shutdown.

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